

REMARKS

Reconsideration and allowance in view of the foregoing amendment and the following remarks are respectfully requested.

Claims 1-19 are now pending.

The drawings were objected to as failing to show the grooves or dimples claimed in claims 9, 10, 15, and 16. The feature that the baffle surface facing the cooling gas flow can have surface manifestations, such as grooves or dimples, is disclosed in paragraph [0016]. Revised Figure 3 is attached which schematically depicts surface manifestations, such as grooves or dimples, at 42. No new matter has been added as no more is illustrated than that which would be understood by the skilled artisan from the original disclosure including in particular paragraph [0016]. Withdrawal of the objection to the drawings is requested.

Original claims 1-3 and 11-13 were rejected under 35 USC 102(b) as anticipated by Sapper. Applicant respectfully traverses this rejection.

Sapper proposes a ventilation scheme which includes stator and rotor ducts. The rotor ducts function as a centrifugal fan in establishing the forced circulation of the gas-coolant through the machine. In the ventilation scheme Sapper proposes, the cooling air flows from the rotor duct, to the rotor-stator air gap, then continues from the stator inner diameter to the stator outer diameter. This is known in the art as a once-through ventilation scheme.

In an embodiment of the invention, a structure and an economic method are provided to improve the performance of e.g., a reverse flow ventilation scheme. In a reverse flow ventilation scheme, as illustrated below and as schematically shown in Figure 1, the air flows in an opposite direction in the stator core as compared to the Sapper scheme.

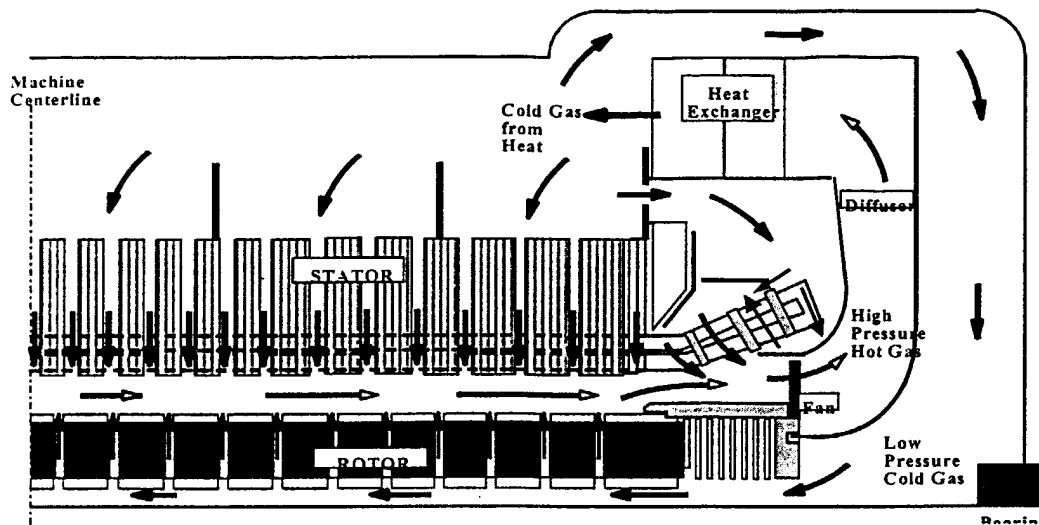


Figure 4

The above illustration shows a conventional scheme of reverse flow ventilation. In a reverse flow ventilation scheme, the rotor draws its cooling air through the sub-slots and rotor slots. The gas through the stator core is flowing radially inward through the cooling ducts and combines with the discharged rotor gas in the air gap. Axial flow fans discharge the heated air from the air gap to the heat exchangers. For such a ventilation scheme, the air inside the air gap has the highest temperature. Therefore, applicant recognized, it is important to prevent its recirculation or stagnation at the end of the core and flanges. The invention provides an economic way to prevent this undesirable recirculation.

In accordance with Sapper's disclosure, dividing device 8 which the Examiner has attempted to equate to the claimed baffle plate, includes a radially extending portion and a cylindrical portion 10 that surrounds the short-circuit ring 14 to form an annular throttle-type seal 18. This forms a virtually air-tight partition between the stator-rotor space 1 and the flow inlet space 4. The purpose of the Sapper configuration is to prevent gas from flowing axially inward at this juncture. It is clear, therefore, that

apparently critical to Sapper's assembly is that his "plate" 8 include the axially extending cylindrical portion 10.

In contrast, the invention provides a flange baffle for improving cooling and heat transfer by eliminating the hot air flowing out of the gap from recirculating in the region at the radially inner end of the laminations. Thus, as recited in claim 1, the inventive baffle plate is a flange baffle, which is generally planar and as such does not include anything resembling the cylindrical portion of Sapper. In that regard, in the context of claim 1, "generally" is used to describe the planar baffle because, as disclosed and as recited in certain of the dependent claims, the baffle plate may have surface manifestations such as grooves or dimples for generating a turbulent flow to enhance heat transfer.

In contrast to the invention, the "plate" 8 of Sapper includes a generally flat radial portion but also includes the axially extending cylindrical portion and as such the plate is not generally planar, as required by applicant's claim 1. Thus, claim 1 is not anticipated by Sapper. Claim 1 is not obvious from Sapper either because, as noted above, the cylindrical portion 10 of Sapper's plate 8 is an apparently critical feature of his invention, to provide the annular throttle-type seal 18.

It is therefore respectfully submitted that the invention of claim 1 is not anticipated by nor obvious from Sapper.

The invention also has significant advantages over Sapper in the combination claimed because the flange baffle also functions as an external fin to the flange which increases the conductive surface area and the air velocity along the surface. As a result, more effective cooling may be achieved for both the end core and the flange.

Method claim 11 has been amended hereinabove to explicitly state that the method for controlling the ventilation flow is for controlling ventilation flow in a generator having a reverse flow ventilation scheme. Further, the cooling air is now

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Serial No. **10/063,966**
April 16, 2003

more specifically recited as directed to flow radially inwardly through the stator structure and radially inwardly between the stacked laminations and the flange component. These method limitations is not anticipated by nor obvious from Sapper.

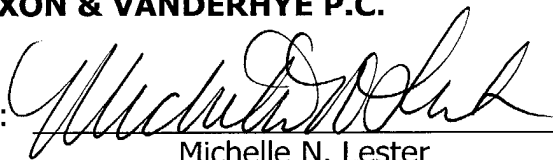
New independent claim 17 corresponds to allowable dependent claim 4 presented in independent form and new claim 18 corresponds to original claim 5 but depends from newly independent claim 17. New claim 19 depends from method claim 11 and specifies that the baffle plate structure provided is a generally planar baffle plate structure. These claims are submitted to be allowable over the prior art for the reasons advanced above.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance and an early Notice to that effect is earnestly solicited.

Respectfully submitted,

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